

**Remarks:**

These remarks are responsive to the Office action dated April 19, 2007. Prior to entry of this response, claims 1-20 were pending in the application. By way of this response, claim 7 is amended. Applicant respectfully requests reconsideration of the application and allowance of the pending claims.

**Allowable Subject Matter**

Claims 13-20 are allowed and claims 7 and 8 are indicated to be allowable if rewritten in independent form. Applicant thanks the Examiner for the indication of allowable subject matter. In accordance with this indication, claim 7 is amended into independent form, thus placing claims 7 and 8 in condition for allowance. Claims 13-20 are also in condition for allowance.

**Rejections under 35 U.S.C. § 102**

Claims 1, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Number 5,617,829 (Bidner), and claims 1-4, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Number 5,839,409 (Denz). Applicant respectfully traverses these rejections, because neither Bidner nor Denz disclose each and every element of independent claim 1.

For example, independent claim 1 recites, among other limitations, "determining a duration required for reactivating at least said at least one engine cylinder; and reactivating at least said at least one engine cylinder based at least on said duration." The cited prior art does not disclose the concept of "determining a duration required for reactivating," as claimed. In fact, the cited prior art does not even consider the possibility that the actual duration it takes to reactivate could be important, and therefore does not describe determining this time and/or using the determined time in reactivating the cylinder.

In contrast to the prior art, Applicant recognizes the importance the duration of reactivation can play. For example, see page 1, line 20 to page 2, line 1:

The inventors herein, however, have recognized a disadvantage that can be encountered when deactivating fuel injection to engine cylinders. Specifically, engine stalls can occur when trying to re-enable deactivated cylinders depending on engine speed. Further, it takes a certain duration (e.g., amount of time, or number of engine cycles) to re-enable engine firing.

And see page 2, line 18 to page 3, line 11:

By considering the duration required for reactivating at least said engine cylinders and a minimum speed value, it is possible to reactivate engine cylinders under conditions that reduce any engine stalls. In one example, it is possible to predict a future engine speed based on the required reactivation time, and then use this predicted speed to prevent the engine from falling below a minimum allowable speed value. In another example, a table of engine speed limits can be generated as a function of required reactivation time and rate of change of engine speed. Various other examples can also be used.

Note that the duration required for reactivation can be in various forms. For example, an amount of time required for reactivation can be used. Alternatively, a number of engine cycles required for reactivation can be used. Still other example, such as a combination of time and cylinder events can be used. Also note that in the examples using a minimum engine speed, it can be a fixed value, or a variable one calculated and adjusted during vehicle operation.

Bidner discloses operating the vehicle in a clean mode after cylinders are reactivated, but does not disclose determining the time it takes to reactivate. Denz discloses injecting extra fuel for a certain duration during reactivation, but does not disclose determining the duration that the reactivation will take.

Furthermore, neither reference discloses reactivating cylinders based on a determined reactivation duration, as claimed.

Because the prior art is completely silent with respect to determining a duration for reactivation, the prior art cannot anticipate claim 1, which specifically recites "determining a duration required for reactivating at least said at least one engine cylinder." Therefore, rejection of claims 1-6 and 9-10 should be withdrawn.

Rejections under 35 U.S.C. § 103

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Denz in view of U.S. Patent Number 5,839,409 (Hasegawa). Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Denz in view of U.S. Patent Number 5,337,715 (Gonzales). As discussed above, Denz does not disclose the concept of determining a duration of reactivation. Hasegawa and Gonzales also fail to disclose this concept. Therefore, rejection of claims 11 and 12 should be withdrawn.

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Conclusion

Applicant believes that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, Applicant respectfully requests that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Please charge any cost incurred in the filing of this Response, along with any other costs, to Deposit Account No. 06-1510.

Respectfully submitted,

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